

77
INTRODUCTORY LECTURE

TO

THE COURSE 1841-2,

DELIVERED IN THE

ANATOMICAL THEATRE

OF THE

UNIVERSITY OF PENNSYLVANIA,

THURSDAY, NOVEMBER 4, 1841.

BY WILLIAM E. HORNER, M.D.,

PROFESSOR OF ANATOMY.

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PHILADELPHIA, Nov. 5th, 1841.

Dear Sir,—In compliance with a unanimous request of the Medical Class, we, their committee, tender you an acknowledgment of their high obligations for the comprehensive and able address delivered before them on the 4th instant, and earnestly solicit a copy of the same for publication. With sentiments of high consideration, we remain

Your friends and obedient servants,

WALTER A. BROWN, Va.

A. H. MACNAIR, N. C.

THOS. C. ARRINGTON, N. C.

G. W. KING, Miss.

E. A. CRUDUP, N. C.

JNO. S. PEETE, Tenn.

To Prof. W. E. HORNER.

UNIVERSITY OF PENNSYLVANIA, Nov. 6, 1841.

To Messrs. BROWN, MACNAIR, ARRINGTON, KING, CRUDUP and PEETE.

Gentlemen,—I have received, with a deep sense of regard and attachment for the source whence it originates, the request of the Medical Class, conveyed through you, that a copy of my Introductory, delivered on the 4th instant, be furnished to them for publication. Aware how little the production is worthy of that distinction, and convinced that more is owing to their generous feeling on this occasion, than to any merit it may justly claim, I yet feel constrained to exhibit my respect by yielding to their declared wishes.

I am, very sincerely,

Your friend,

W. E. HORNER.

INTRODUCTORY LECTURE.

GENTLEMEN OF THE MEDICAL CLASS:

The Department of Instruction confided to me in this School being Anatomy, I shall upon the present occasion endeavour to occupy your attention with some remarks, intended to be useful by inviting you to a diligent prosecution of this Science; and which may serve to explain its nature, and also to indicate the best mode of learning it, or, in other words, to point out what I conceive to be the most certain path for conducting you to a degree of knowledge, indispensable to the safe and judicious practice of Medicine.

Besides the direct connexion of Anatomy with the future business of your lives, I say with confidence, that there is no study within reach of the faculties of man, more justly entitled to his respect, more instructive to his understanding, or more beneficial to the fine qualities of the heart. That wonderful organization, whereby a machine of a thousand wheels, self-conservative and self-repairing, is kept in motion for a hundred years, is truly a subject worthy of the contemplation of the human mind, and leads thereby inevitably to the most reverential and affectionate consideration of the Author of so great a miracle.

An ancient philosopher and physician in examining the structure of the hand and of the foot, and seeing how admirably they are adapted to their uses, gives the following well known but not the less beautiful and elevated expression to his feelings: “In explaining these things, I compose a solemn hymn to the Author of our bodily frame, and in this I think there is more true piety, than in sacrificing to him hecatombs of oxen, or burnt offerings of the most costly perfumes: for I first endeavour to know him myself, and afterwards to show him to others, to explain to *them* how great is his wisdom, his virtue and his goodness.”

Such were the sentiments of one of the most remarkable men of antiquity, the celebrated Galen, who, though time and additional experience have dimmed the lustre of his name, and made it less familiar to modern science, yet in the history of the human intellect, stands forth as a half-inspired spirit, whose genius for a long period formed the rallying point of almost every thing learned and venerable in medicine. The fervidness of feeling, and the excitement of imagination thus acknowledged by *him*, have not been restricted to his day; for the perpetuity of the human character develops precisely the same emotions and sentiments in hundreds of persons who attach themselves to the cultivation of Anatomy.

It has been justly said in regard to the humility of our origin, that “man is formed out of clay, but on the other side of this question, how shall we sufficiently admire the hand which has fashioned him? The seal of this workman is impressed upon his work, and he seems to have taken pleasure in making a master-piece out of a material so vile.” “I know not,” said a mother to her children, “how you were formed in my womb, for *I* neither gave you breath—nor soul—nor life, neither did *I* fashion your limbs, but doubtless the Creator of the world.”

This glance at some of the most stirring considerations arising from the study of Anatomy, intimates how abundant, varied and profound they are, and how they lead us to the sublimest end of philosophy, to wit: the love and admiration of that great Power which, though seated in impenetrable darkness and involved in inscrutable mystery, yet reveals in so many ways its wonderful wisdom and energy.

The most customary scholastic division of Human Anatomy is into Special or Descriptive Anatomy, General Anatomy, and Pathological Anatomy.

1st. General Anatomy is of comparatively modern origin, and has for its inventors Haller, Bordeu and Bichat. It is especially under the influence of the latter that its traits have been more distinctly figured, and that it has assumed a first rate importance. To my talented and eloquent colleagues, the Professor of the Practice of Medicine, and the Professor of the Institutes, you will be indebted for a just appreciation of

its value, and for the pointing out in extenso of its connexion with the laws of organic life, and their immediate dependence on it. General Anatomy is derived from the following facts. Every animal is an assemblage of many organs, each of which executes a particular function, and by a harmonious co-operation with others keeps the machine alive. A minute analysis of each of these organs proves that it is composed of many elementary textures, just as we find chemical substances made up by a combination of several gases, acids, alkalis and other matters. Moreover, it is ascertained that every organ of the body presents such textures in greater or less number, and in proportions exhibiting great varieties. In some organs certain textures only exist, in other organs other textures, but the individual textures, wherever placed, preserve their type of originality, and their character is therefore universally preserved, notwithstanding a varied association with other textures, according to the organ to be constructed.

Thus constituted, each tissue or texture, and each organ are possessed of their specific vital properties, in which they differ to a remarkable degree from other textures and from other organs, in the phenomena and in the intensity of their life. Cartilages, tendons, and bones have but very little life, but the muscles and the skin have it very copiously. Moreover, each tissue has its peculiar modification of vitality, on which repose secretion, exhalation, absorption, and nutrition. The blood is the common store house from which each chooses what suits its nature, and rejects other matters.

The symptoms of disease have a close correspondence with the tissue, which is affected by inflammation. In the inflammation of a mucous tissue, the fever is frequently mild, and sometimes scarcely perceptible, while in the case of a serous tissue, as the peritoneum or the pleura, the fever is very intense. In inflammations of the skin, the fever is developed some days before the eruption. Even the duration of disease, is controlled by the tissue in which it is situated. Thus, inflammations of serous membranes, of mucous and of cellular substance run through all their stages in a few days, while those of the bones and of fibrous textures require seve-

ral months. It is from this exposition obvious, that the term chronic, which is much used in medicine, is extremely indefinite ; two months would be a chronic inflammation of the peritoneum, but in a bone the first stage of the disease would scarcely have elapsed.

These views exhibit the importance of ascertaining the number and the quantity of each of the simple tissues in every organ. The means resorted to for this purpose are putrefaction, maceration, drying, boiling, the action of acids and of alkalis. Each of the simple tissues is affected in its appropriate manner by these tests, which are intended as a mere supplement for the imperfection of dissection, and not to ascertain the gaseous elements of bodies. The changes effected by these tests, establish distinctive characters for the different tissues, whereby it is proved that each has its particular organization, as it has its particular mode of life. The results also prove that division into tissues of the whole human frame rests not in the imagination only, but, upon real differences of intimate structure.

2. Descriptive or special Anatomy, means the shape, position, connexions and intimate composition of every part of the body. Through it we gain a complete knowledge of the Head, Neck, Thorax, Abdomen, and Extremities. The manner of learning it is by Lectures, by personal dissections, and by private study of the writings of good authorities.

There is no department of knowledge, let it be ever so ably treated of in books, which may not be learned with additional facility, by oral instruction from a competent teacher. The interest which a public speaker excites, always produces a more lively and pleasant attention, than any printed communication from him. But if this hold good in the most abstruse inquiries, much more valuable is the plan where an object is to be demonstrated. This opinion is so true in Anatomy, that the solitary student, with the most approved descriptions and plates, and with a subject at his command, will find it one of the most discouraging and perplexing studies that can be undertaken. Besides his want of skill in the merely mechanical separation of parts, he finds in every dissection, such a resemblance in the colour and shape of organs of different

natures, that his mind becomes bewildered, and he feels an insurmountable difficulty in making a clear and satisfactory progress. These impediments to solitary study are not exaggerated, they are witnessed every year and universally confessed by such as have been exposed to them. Such being the case, there is no competent substitute for demonstrations from a teacher, and, especially, when his lessons are illustrated by the means for a full course of Anatomy.

To a zealous teacher it is therefore of the first importance, to adopt a plan of instruction, which will be most easy to the memories of his hearers, and will present the objects of study most distinctly to their eyes. With the view of obtaining these ends, Lecturers on Anatomy follow the natural classes of structure by dividing their course into Osteology, which treats of the Bones; Myology, which treats of the Muscles; Splanchnology, which treats of the Viscera; Angeiology, which treats of the Vessels or Tubes conveying Fluids; Neurology, which treats of the Nerves; Dermology, which treats of the Skin; and some others.

I feel assured by the example and authority of the most distinguished anatomists, by ancient and long continued usage, and by my own experience, that to the young student this is the most advantageous arrangement. It is perfectly simple, for each class presents its particular objects to the mind by the strongest tie on the memory, to wit, that of natural association. But setting aside experience on this subject, let us inquire what encouragement to the plan, is held out by the usage of teachers in the other sciences. Linnæus, and Jussieu have obtained lasting reputation by arranging plants into their classes, orders, and subordinate divisions, thereby pointing out their resemblances and differences in so summary a way, as to have facilitated greatly the labours of the student. The Abbé Haüy did the same for Mineralogy, thereby subjecting a desultory and unsettled science, to certain uniform and easy rules. Chemists classify the phenomena and attributes of Caloric, Acids, Alkalis, Metals, Gases and other substances. The Teacher of *Materia Medica*, also, finds it useful to classify medicines, and not in a way corresponding with their natural and exterior relations, but in their effects on the

human body. The Teacher of the Practice of Medicine has likewise a classification of diseases. In fine, there is no branch of knowledge, which is not learned with immense additional rapidity by a simple act of arrangement.

In examining a vast field strewn with its vegetable productions, its trees, its shrubbery, its flowers, and with its varied animals: the multitude of its objects and their indiscriminate mixture, would bewilder at the first inspection any mind not instructed in natural history and in botany. The process for removing this feeling of confusion, and such as is almost unconsciously adopted, is to begin to group, according to the most striking similitudes. The quadrupeds are put into one group, the birds into another, the trees into a third, the shrubbery into a fourth, and so on. If the objects continue to allure us, a more familiar acquaintance leads to remarking more minute resemblances and distinctions, so that we proceed to form other divisions and sub-divisions, and thus arrive at length at a natural and minute classification of every thing which presented itself.

Nothing certainly can be more important than to arrange well a course of study, for the reputation of the teacher and success of the pupil are both deeply involved. The opinions, in Anatomy, in regard to this point, are various and very legitimately controverted, the one by another. I certainly feel no intolerance for convictions differing from my own, and admit that however erroneous, they may be very honestly entertained. But the plan, the responsibility of which I am entirely willing to assume, is that of Systematic Anatomy. I have unlimited confidence in its value and in the certainty with which it will lead a diligent student, to a successful issue of his labors. But other doctrines, apparently more new, have their advocates, and as change is always pleasant to the human mind, we are liable to sacrifice very important truths because they are settled, for the sake of errors because they appear to be new discoveries.

We all rejoice in what seems to be the advancement of a science, and as advancement is always a novelty, we are much exposed to the error of mistaking novelties for advancement, while many of them are, in fact, merely antiquated and

abandoned crudities, the expression of narrow and incomplete views, and sometimes merely of a spirit of change. Every man whose experience in the profession of medicine extends to twenty years, must have seen examples of a folly falling into general oblivion, and then revived so as to have a currency once more; again sinking into oblivion, and again coming to life. And so it will probably continue till the end of time. It is, however, incumbent upon us, on all occasions, to be diligent searchers after truth, and having found it, to adhere to it with a tenacity which admits of no compromise with error, or with a mere spirit of innovation. It is the fate of every science to be surrounded in its infancy by errors, and to be led more or less astray by them; as it advances, these errors are detected, laid aside and forgotten. But it very unfortunately happens that men of speculative minds, not disciplined by experience and observation, get tired of pursuing the habitual course, and adopt devious and unsatisfactory tracks which have been more than once abandoned. An extravagant eulogy of their convenience and shortness obtains credit, and enlists followers, whose credulity is undeceived only when it is too late to profit by the discovery of their error. It is then admitted that the really royal roads to knowledge, are those which experience had already laid out and executed.

One of the most common deviations from that mode of teaching Anatomy which I have said enjoys my own preference, is the one called Surgical Anatomy, which has its origin in a conviction of the value of uniting the study of Surgery, in the same Lectures to the study of Anatomy. Nothing certainly can be more valuable than such an union when it is formed at a proper period, but in the early stages of one's progress, in a difficult pursuit it ought not to be doubted, that the easiest way of familiarizing the mind to its objects, is to keep them clear of extraneous matters, and to present them in a state the least incumbered with other considerations. Elementary ideas are to be first instilled, their combinations are next to be formed, and lastly is to be studied that complicated intertexture of tissues and parts which the human machine so universally presents. Mr. Colles, of Dublin, a surgeon deservedly distinguished for his skill and for his valuable

contributions to the science of medicine, is one of the most potent advocates for beginning with Surgical Anatomy, in our investigations of the structure of the human body. He gives in his work on Surgical Anatomy, the following account of the systematic plan as generally adopted. "An attempt to explain the nature and structure of the animal machine, by dividing the several parts of which it is composed into distinct classes, and then giving a detached and unconnected description of each class, without ever considering them as component parts of one organized whole, is as preposterous and unavailing, as the attempt to explain the mechanism of a watch by taking it to pieces, and giving a separate description of every wheel and spring, without afterwards attempting to show by what contrivance the one moves the other, or how each wheel contributes by its particular motion, to regulate the general movements of the whole."

I have selected the preceding passage because it comes from very excellent authority, and because it represents the sum and substance of the most plausible objections to the usual systematic teaching of Anatomy. This passage is, however, itself a fair subject of animadversion, because it exhibits defectively, I will not say disingenuously, the case which it claims to represent. The phrase "giving a detached and unconnected description of each class, without ever considering them as component parts of one organized whole," presents an exceedingly fallacious view of this question, and is indeed an assertion very badly sustained by the facts themselves. Thus, I ask, what anatomist demonstrates a muscle without including its origin, its insertion, and its contiguity to other muscles? With blood vessels and nerves we always point out the positive relations to other parts, and also their destination. The position of the heart in the thorax, and its contiguity to other parts, are invariably leading and prominent traits in its description. The liver, besides an immense deal of intrinsic anatomy, is rich in the considerations arising from its position and relations. I might in this way pass from organ to organ, and vindicate in succession the usage of the systematic Anatomist in regard to each, but this pursuit may be very properly suspended upon the analogies already presented. The insulated dissections of the

muscles of the extremities, and of the trunk, appear to me to be the ground work of all the preceding objections; to the systematic Anatomist, however, the muscles are the frame, the foundation along with the bones, upon which he erects his superstructure and finishes his task in all its details.

The assumption that the systematic Anatomist makes the most violent and unnatural disunions, is wholly gratuitous and unfounded, and on the contrary it may be proved that his opponents are the most amenable to the charge. For, being forced to divide the body into regions, in order to meet the unavoidable demands of their plan, they are obliged to cut into two or more pieces parts having a continuous line of connexion, as the trunks of arteries, of nerves, and the bellies of muscles. For example, in describing the neck upon a regional arrangement, they must begin the account of the carotid artery at the root of the neck, instead of at the aorta, or at the innominate. The nerves of the neck must be taken up, not at their origin from the base of the brain, and from the medulla spinalis, but from the foramina through which they issue. This arbitrary mapping of the body is attended with similar disadvantages wherever it may be applied, but it is unnecessary to multiply the examples of its defectiveness; it produces every where unnatural and confused disunions, and is least of all calculated for a lucid progress to beginners, or for those whose minds are not invigorated by a large share of preparatory knowledge on Anatomy.

I will now venture upon a point, more personal in its application to the reputation of the teachers of Systematic Anatomy: it is asserted by some that they adhere to this plan because it is the easiest to their own memories. I deny this, because so far as powers of recollection are concerned, it does not appear to me that they gain in the least; on the contrary, I think that they encounter some increased labour or effort to keep precisely in their minds, the facts or observations that they propose to their auditors. It is, I assert, at any rate, a great mistake to suppose, that a preference is founded in this way. Experienced teachers of Anatomy, are for the most part, so much in the habit of witnessing dissections and of reflecting on them, that they are on as easy terms with the structure of the human body, as they are with the most fami-

liar objects of life. I should as soon expect a man to adopt a certain rotation for recognising his acquaintances, or a carpenter to require the materials of his trade to be placed before him in a certain order before he could know them, as for an instructed anatomist to demand a certain routine of demonstration for his own memory.

Let us now pass from the consideration of the manner, to that of the sources and of the means from which your instruction is to be derived. One of the most prominent is the Anatomical Museum. Since the accession, in 1792, to the Chair of Anatomy by the celebrated Wistar, an unceasing object has been to improve and to enlarge this collection. At his death, in 1818, his amiable consort, bearing in mind the extreme interest which he had always felt for the advancement of his chair, and for augmenting the facilities of Anatomical instruction, became convinced that it was his intention to leave his cabinet to the University, and that the bequest would have been made, had his sickness not passed through so rapid a course. Mrs. Wistar, therefore, determined to manifest her affection for the memory of her deceased husband, and the interest she felt in the scene of his labours, by purchasing at her own expense and presenting to the University his collection. This she did much to her own credit, and to the satisfaction of the friends of Dr. Wistar's reputation.

This collection consisted principally in a very fine series of dried preparations of the Sanguiferous and Lymphatic Systems, of Corrosions, and of Models in wood on a very magnified scale. The preparations of the Lymphatics, are for the most part, from the school of the celebrated Mascagni, having been imported from Italy about 1812. The other articles were made in Philadelphia. In the year 1824, the Managers of the Pennsylvania Hospital, with a commendable liberality, gave to the University their Anatomical Cabinet, consisting in preparations; in Models, in wax, made by Doctor Chovet; and in Plaster Casts and Crayon drawings, both of which were originally sent as a present from Doctor Fothergill, of London, in 1762, being brought by Doctor William Shippen, the first Professor of Anatomy, but then a young man, and about settling in Philadelphia.

With an extensive foundation thus laid in the liberality of

Mrs. Wistar, and of the Pennsylvania Hospital, it has been my unceasing care to keep those articles in a state of good preservation, and to add to their number. The extensive accommodations of the present Medical Hall, erected upon the ruins of two others, and the amplitude of the room allotted to the Anatomical Museum, have afforded a strong incentive and a great opportunity for exertion. A numerous series of wet preparations, forming now the body of the Museum, has been made, and includes a very large number of the most interesting specimens of morbid anatomy, and of minute structure. The variety of articles illustrating the different topics of human anatomy, is so extensive that it would be extremely difficult to introduce them all by demonstration into a Course of Lectures. The dissections, however, of the recent subject, so as to exhibit all the parts in a condition most approximated to the living state, may be considered as constituting the body of the course of Anatomy, that portion upon which the greatest effort will be made; preparations being resorted to as a supplement to particular points, and more especially to exhibit those minute features of structure which require much time and detailed attention to expose them.

Having given the foregoing sketch of the plan of instruction to be pursued by me, and of the resources for carrying it into execution, it remains yet for me, to point out what you have to do for yourselves. One of the most indispensable engagements for acquiring a full and available knowledge of Anatomy is for each one to take up the knife for himself, and to repeat the dissections which are displayed upon this table. This I consider as the most laborious, the most painful and the most self-denying of the several acts of study in which you must engage, so as to become well qualified physicians and surgeons. Candor also compels me to say that there are few whose ardor and exertions carry them to an extent commensurate with the importance of this matter, or equal to the desires and anxieties which I have in regard to it.

The repulsive associations of practical Anatomy, the awkwardness and the unsatisfactory results of the first dissections, the difficulty of proceeding without a monitor continually at the elbow, all conspire to quench zeal, and to produce a preference for any other mode of learning. Autopsies, or per-

sonal dissections, are unquestionably peculiarly advantageous, in many respects I may say indispensable: they teach us to handle the scalpel—to exercise a variety of small mechanical processes in the use of the saw and chisel, which are commonly omitted in a liberal education: dissections also appeal to and educate the sense of touch, imparting in that way a description of information which no language or inspection can convey; for the faculty of touch stands alone in its accuracy, being much superior in that respect to the others, and always exercising a critical and judicial authority over them. This sense should therefore be so cultivated by the Anatomist that its indications alone, without the use of the eye, should inform him what tissue or what organ he is engaged with. It is incontestible that nothing but repeated handling will procure this knowledge.

In surgical operations the sense of touch is frequently the only guide; often in the extirpation of tumours, and the taking up of arteries, the parts are so covered with blood, that the eye is no longer competent to direct the hand. In exploring deep and dark cavities, the eye is very inadequately applied; and in the processes of midwifery, delicacy forbids the eye to be at all used. Under all these circumstances, there is a positive demand upon us for a discriminating and experienced touch; without it, danger to the patient and disgrace to the practitioner are constantly impending. To avert these, we must apply ourselves diligently to dissections, and a few days of earnest effort in familiarizing us to their difficulties, will also create an attachment and admiration, which will last profitably through life. I need scarcely say to those who are attending lectures for the first or second time, that now is the period for fulfilling this duty: your studies passed through and your degree acquired, with this neglected, a lasting and depressing influence is to be felt in your professional career to its termination. It is least of all probable that any subsequent resolution or opportunities will supply the present neglect. The practitioner of medicine, on first entering into business, almost invariably does so with the resolution of improving in his anatomy by dissections, but I am satisfied, from uniform declarations on this subject, that the intention is seldom or never realized. The prejudices of

the neighbourhood, other occupations, want of suitable accommodations, the difficulty of obtaining bodies, and the unsatisfactory, discouraging nature of dissections when conducted without experience, form an insurmountable obstacle to almost every one. . The idea of dissections is finally forgotten, and the only trace which is left is an occasional superficial post mortem examination, upon very rare and particular occasions.

Having presented these motives for you to engage in practical Anatomy, it gives me pleasure to state for the information of such as are yet unacquainted with the interior of this building, and with the arrangements for Anatomical study in it, that every measure has been attended to in the dissecting rooms, which is likely to contribute to the comfort and improvement of dissectors. This department being confided to my friend, Doctor Paul Beck Goddard, may be considered as in the most satisfactory and competent hands. To the skill arising from years of study and of experience, he unites the advantage of a large measure of talents well adapted to it, as well as to many other subjects of science. The introduction of gas, for the purpose of producing a full light to each table, may be considered as completing our arrangements, and we now desire nothing but an industry on the part of students, equal to the opportunities which may be presented to them. To this intimation, I will also add, that dissections themselves are under the influence of certain good principles, besides industry: they are to be conducted according to a well devised plan, and also with great attention to neatness and distinctness. Both of the latter are the proceeds of time and labour, and without them there is great risk of going through a course of dissections in a profitless and unproductive manner. Many persons of good sense, in other respects, affect to hold lightly, the pains-taking displays of the several parts of the human body, asserting that they are an useless and over refinement. But this is a signal mistake; the advances which are now making, and may still be looked for in Anatomy, must come from such as have better eyes, or more expert hands than their cotemporaries. Delicate preparations require time and dexterity to accomplish them, and are offerings to the science of Anatomy made most frequently by curtailing the hours of

sleep and of amusement, or by a sacrifice of more lucrative employment.

It is incumbent on the student of Anatomy to read on the subject, besides attending to demonstrations and dissections. It serves to fix in his mind what he has just seen, and to familiarize it to anatomical descriptions. Reading without the aid of dissection or plates, is rather of equivocal utility; the best purpose that it attains is to make one acquainted with the terms of the art. Words seldom convey of themselves the ideas of figures to an uninitiated person. Anatomy is even defective in its peculiar terms; many of them are derived from fancied resemblances to external objects and to mathematical figures, the consequence of which, to an unprepared student, is a very great misconception of shape, creating sometimes no small surprise when the thing itself is seen. For dissections, the abbreviated treatises are best, but for deliberate and profound study the more elaborate productions are required.

In looking to the literary department of his art, the Anatomist of the present day has just cause to be gratified at the exhibition of industry and at the impress of genius which have stamped so many productions of his compeers. To an indefatigable attention in developing and explaining points of structure, are now added all that richness and elegance of illustration which are derived from the art of engraving and of drawing. Works of high merit, for the fidelity and excellence of their plates, are so numerous, that to designate all on the present occasion would be tedious; among the most prominent are Scarpa's Plates of the Nerves, Mascagni's *Anatomia Magna*, Caldani's Anatomy, Sir Astley Cooper's Plates of Hernia, the Anatomy of Mr. Julius Cloquet, Breschet's Plates of the Veins, Swan's work on the Nerves, and Bouterbanc and Jacobs on Anatomy generally. The north of Europe, with whose literature we are less acquainted, has also been distinguished by productions of the same kind, of the highest merit.

The field of Anatomy has been so well explored, that one might suppose every thing about it to be fixed upon an immutable basis, yet we are every now and then edified by observations which are entirely new, or which modify so much

our preceding conceptions, that they add very materially to our state of knowledge. The present century, for example, has been distinguished by the invention of general Anatomy, by several important specialities in descriptive Anatomy, and by certainly very advanced views on the conformation and physiology of the nervous system. Malacarne and Vicq D'Azyr, at the latter part of the last century, led the way to the precise Anatomy of the brain of the present century, as exhibited by Reil, by Gall and Spurzheim, by Serres and by Tiediman. Each of these gentlemen has laboured in a way which has been prolific of new observations on Cerebral Anatomy, and must give permanent distinction and classical value to his works. These efforts on the part of the Anatomist were not lost upon physiologists, and have thereby produced many interesting novelties in doctrine and in discovery.

To the researches of Tiediman we are indebted for a knowledge of the exact parallel between the several fugitive stages of development of the human brain and the permanent development of that organ in certain kinds of animals, and consequently the existence of a fundamental type or pattern, one and the same, in all beings having a cerebral mass. The conclusion has also through him been more definitely reached, that the increment of particular portions of the brain on the scale of animals is always indicative of an increase of intelligence, of faculties which fit them more exactly to their sphere of action. Thus in fishes the hemispheres of the brain are small—in birds they are larger, and in carnivorous and ruminating mammalia, the analogy with man is rendered more striking by the presence of convolutions.

The experiments of Mr. Flourens on the brain by the excision or removal of its parts, have gone far to prove that the cerebrum is the seat of perception, of memory, and of volition. The experiments of Rolando had previously indicated that the Cerebellum presides over locomotion. These two principles established, numerous are the details of experiments by other physiologists, and especially by Mr. Majendie, by Bouillaud, and by Fodera. To Mr. Legallois we owe the information, that the medulla oblongata presides over the respiratory movements. And to Sir Charles Bell we are indebted for

one of the most interesting and curious discoveries, that the power of conducting sensations resides in the posterior portion of the medulla spinalis with its nerves, while the stimulus to motion, or the director of that faculty, is in the anterior columns of the medulla spinalis, and its corresponding roots of nerves. A mere glance at these points is all that can be taken on the present occasion; from another chair, one which is so much distinguished by its intelligence and zeal, you will learn all the consequences of these fruitful propositions in physiology.*

3d. The last subject to which I propose, on the present occasion to call your attention, is Pathological Anatomy, or the alterations in the natural structure and form of parts produced by disease. It is sufficiently evident that this study should follow descriptive anatomy, and not precede it, for it is impossible to tell what is diseased unless a knowledge of what is healthy is first obtained. Immense progress has been made in this science within a few years, and medicine now derives the most obvious advantage from it in the diagnosis and treatment of disease. The sagacity of Bichat enabled him to foresee this state of things; his words are, "We live in an age when pathological anatomy will have great prominence, for this science is not only a knowledge of the organic derangements which arrive gradually in chronic diseases, but to it belong all the alterations, which our parts can experience at any time whatever, that one examines their diseases." The last twenty years have been filled with the accomplishment of this prophecy. The entire ground of chronic and of acute diseases, has been retraversed and explored with a diligence unknown to former periods, and numerous are the names which stand conspicuous among its cultivators. Broussais, Laennec, Louis, Billard, Lallemand, Rostan, and others, have each signalized themselves by the most important observations. An ardor generated in Europe under the unequalled opportunities of the Parisian Hospitals, has had its fires extended to America, and we are now following out and enjoying in our own country, to a great extent, the benefits of these investigations.

*See Edinburgh Medical and Surgical Journal, Vol. 21, 1824, for a good paper on the then existing state of Cerebral Anatomy and Physiology. Also, Report of British Association, Vol. 2, 1835, Physiology of Nervous System by W. C. Henry, M. D. of the Manchester Royal Infirmary.

I have thus presented to you the opinions which I entertain on the manner of conducting a course of Anatomical studies. So far as I am concerned in carrying them into effect, I look with no small solicitude for your zealous co-operation. In regard to my personal exertions, no higher satisfaction can accrue to me, than that of assisting you in this interesting and important engagement. It is a work of much extent, and cannot be brought to a happy conclusion without great diligence and self-denial on your part; but I have every reliance upon your intelligence and upon your resolution as men determined to succeed, and to realize the just expectations of anxious parents and friends.

In standing on this spot as the successor of three of the most illustrious men who have distinguished the medical annals of our country, to wit,—a Shippen, a Wistar and a Physick, I behold in you to a very large extent the children or near relatives of the alumni of this Institution, who have been distributed in every direction throughout our extensive country. We have each a highly responsible part to perform in the upholding of the usefulness and reputation of a school of medicine, which has so far been conducted successfully along the current of eighty years. To you it pertains, by your diligence and earnest application to your studies, to prove that you are not unworthy of the fathers and of the predecessors upon whose skill and virtues the reputation of this Institution is founded, and it is my part, as the immediate pupil of two of its greatest teachers, Wistar and Physick, not to permit so rich an inheritance of honour and distinction to be lost through my neglect, or by the want of earnest exertions to retain and perpetuate it. The history of this school cannot be touched without perceiving that its prosperity has been most intimately connected with the character of its students. Their general dispersion through the United States, the skill with which they have executed their professional duties, and the high social grade to which so many have risen, all of these circumstances have concurred in fixing a determinate value on the place of their education. Without such coincidents, vain would have been the talents of a Rush, a Wistar, a Physick, and others whose names are too well known to require a favourable comment from me.

It is indeed with just pride that this institution can cast its glances around, not only on the walks of private practice, but also into the Halls of Medical Science, and say to many of her most distinguished votaries, you drew the first inspirations of Medical Genius as nurslings upon my bosom. As a parent rejoices in the reputation and honour of a son, she says, behold my offspring in a John C. Warren and his associates, of Boston—in Alexander H. Stevens, of New York—in Reuben D. Mussey, of Cincinnati—in a Benjamin W. Dudley and his associates, of Lexington—in a Charles Caldwell and his associates, of Louisville—in Edwards Holbrook and his associates of Charleston; — Maryland—Virginia—Missouri—Georgia—New Orleans—I may say, in fine, the thirty or more Medical Schools of the United States, containing an array of distinguished names too numerous entirely to mention at this time—all bear more or less the impress of their lineage from this. Even within a few minutes walk of where we are now assembled, there are gentlemen of justly merited and distinguished reputation, our friends and our former pupils, who, emulous of the renown attached to the institution from which an humble individual is now addressing you, have their aspirations excited to the same career of honour and of usefulness. Though on the field of competition, they are no doubt justly and liberally so, and remote may be the period when any sentiment or language may emanate from either side, which may offend the feeling of professional sensibility—set a pernicious example to younger members—or detract from the high dignity which Medicine has attained in this city. Neither school, I believe, is prepared to do, or rather to attempt to accomplish, by vilification and reproach, what it despairs of accomplishing by hard work.

With this imperfect sketch, of the brilliant and admirable examples before you, and of your proximate studies of Anatomy, let us part for the present in retaining a correct view of our respective obligations, in feeling deeply that which is expected of us, and let us in the progress of our labours, do for the best in our respective lines of duty. From such principles of action the best of consequences are but the legitimate results.